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ASSESSING THE MAJOR DRIVERS FOR THE INCREASED HEALTH CARE COSTS ASSOCIATED WITH PROSTATE CANCER

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OBJECTIVES: This burden of illness study was conducted to assess the 12-month resource utilization and health care costs, along with the major drivers of those costs, associated with an incident diagnosis of prostate cancer (PC). **METHODS:** An analysis of incident PC patients identified using a claims database, was performed, for 2005, 2006, and 2007. PC patients and the age and gender matched comparator group (1:4) for each year, were required to have continuous enrollment in a plan and no prostate cancer diagnoses during the 18 months prior to the first diagnosis of prostate cancer in the year. The PC and comparison groups were each described in terms of their health care service use and health care costs, which were compared, using nonparametric Wilcoxon rank-sum tests, with mean values reported here for 2007. **RESULTS:** There were 21,520 men diagnosed with PC in 2007, in this database, and we selected 86,080 controls. The mean health care cost for the men diagnosed with PC was $19,979 vs. $7,105 for controls; $p < 0.001$. The primary drivers for this nearly triple cost difference between the two groups were: hospitalizations ($6,292 vs. $2,375; $p < 0.001$); radiology tests ($3,014 vs. $348; $p < 0.001$); prescription drugs ($2,293 vs. $1,439; $p < 0.001$); and laboratory tests ($880 vs. $203; $p < 0.001$). Resource utilization over the 12-month period showed that the men with PC, when compared to the control group, had a significantly greater ($p < 0.001$) mean number of hospitalizations (0.4 vs. 0.2; $p < 0.001$); radiology tests (10 vs. 2; $p < 0.001$); prescription drugs (22 vs. 16; $p < 0.001$); and laboratory tests (18 vs. 8; $p < 0.001$). **CONCLUSIONS:** The significantly higher 12-month resource utilization and health care costs noted in men diagnosed with PC, compared to age and gender matched controls, are primarily driven by an increased need for hospitalizations, radiology tests, prescription drugs, and laboratory tests.

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HEALTH CARE COSTS IN WOMEN WITH INCIDENT METASTATIC BREAST CANCER RECEIVING CHEMOTHERAPY AS THEIR PRINCIPAL TREATMENT MODALITY

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OBJECTIVES: To characterize health care resource use and costs in US women with incident metastatic breast cancer receiving chemotherapy as their principal treatment modality. **METHODS:** Using a retrospective cohort design and a large private health insurance claims database (2000–2005), we identified all women initiating chemotherapy for incident metastatic breast cancer with no evidence of concomitant or subsequent receipt of hormonal therapy or trastuzumab. Health care resource use (inpatient, outpatient, medications) and costs were tallied on a cumulative basis from date of chemotherapy initiation (ie, index date) to date of disenrollment from the health plan (in most instances, presumably due to death) or the end of the study period, whichever occurred first. Study measures were summarized using Kaplan-Meier Sample Average (KMSA) method; 95% CIs were generated using nonparametric bootstrapping. Reimbursed amounts were used as a proxy for costs. **RESULTS:** The study population consisted of 820 women; mean (SD) age was 58.4 (12.0) years. Over a mean follow-up of 692 days (range: 3 to 2,182), study subjects averaged 1.1 hospital admissions, 6.8 inpatient days, and 62.4 physician office and hospital outpatient visits. Mean (95% CI) cumulative total health care costs were $91,400 ($83,804, $99,050) per patient over this period. Outpatient chemotherapy constituted 24% of total health care costs; comparable percentages for inpatient care, outpatient services, and all other outpatient pharmacotherapy were 19%, 32%, and 24%, respectively. **CONCLUSIONS:** Health care costs are high in US women with incident metastatic breast cancer receiving chemotherapy as their principal treatment modality. This study provides important additional information on the cost of treatment of this disease.

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INCIDENCE RATE AND BURDEN OF ILLNESS OF CERVICAL CANCER IN THE UNITED STATES

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OBJECTIVES: To review the incidence rate, mortality and burden of illness in cervical cancer in the United States (US). **METHODS:** The information was retrieved from the WHO, World Bank, US National Cancer Institute, American Cancer Society, clinicaltrials.gov, Medline and relevant grey literature from 1990 to 2008. We summarized epidemiological information such as numbers of diagnosed cases and deaths, and associated burden of illness was the outcome of interest. **RESULTS:** Cervical cancer is the second most frequent cancer in women worldwide and the leading cause of cancer deaths in the developing world, leading to up to 240,000 deaths per year (WHO, 2006). There were 11,070 new cases and 3870 estimated deaths in 2008 in the United States according to SEER data compared to 265,884 cases and 204,406 deaths in Asia and Africa in 2007 (WHO). The annual economic burden of cervical cancer in the US has been estimated in 2004 as US$1.7 bn (National Cancer Institute) with direct medical costs estimated as $300–400 m (Insinga et al 2005). The cost of treating a single case of localized (early-stage) cervical cancer was estimated in 2000 as US$20,255, while the cost of treating a single case of distant (late-stage) disease averaged $36,912 (Chesson et al 2004). Overall annual cervical cancer prevention and treatment costs were $26,415 per 1,000 females, with routine cervical cancer screening costs were $16,746 per 1,000 females (Insinga et al 2004). The total productivity loss in year 2000 due to cervical cancer mortality was estimated at US$1.3 billion (Insinga 2006). The average number of years of life lost per woman who died of cervical cancer in the United States was 26.3 years (SEER 2005). **CONCLUSIONS:** The incidence of cervical cancer has decreased in the US in recent years but it still poses a major challenge to the US and developing countries.

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COSTS OF CARE FOR ELDERLY METASTATIC PROSTATE CANCER PATIENTS OVER TIME

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OBJECTIVES: Costs of all-stage prostate cancer management over time have been previously examined and are described as U-shaped. There is less information specifically with regard to late-stage prostate cancer (PC), where patterns of care may differ. The objective of this study is to examine costs of management of regionally metastasized (i.e. M1) PC patterns. **METHODS:** SEER-Medicare patients (pts) aged >65 and diagnosed with M1 PC between 1994–2002 were selected. The sample was refined to pts surviving 18 to 36 months post-diagnosis. Mean monthly service (physician, outpatient facility, hospital, DME, hospice, home health care, and skilled nursing facility (SNF))-specific costs were calculated using Medicare payments to providers. Cost patterns at 6 months pre-diagnosis, 6-months post-diagnosis, and 12 months before death were plotted. Graphs were stratified by whether or not patients received treatment for PC (radiation, surgery, drug therapy). **RESULTS:** A total of 1678 pts were available for the analysis based on the inclusion criteria. Approximately 88% received treatment. A U-shaped cost accrual pattern was observed for treated patients and patients managed by watchful waiting (WW). A peak in costs was observed at month of diagnosis, and a higher peak at time of death. The magnitude of costs was higher among treated patients, with mean costs reaching approximately $7500 at death (versus $4000 among patients under WW). Among cost components, hospital services contributed the most to cost accrual, more so in untreated patients. Treated patients cost more than untreated patients with regards to physician services, while untreated patients appeared to incur SNF costs more consistently across the observation period. **CONCLUSIONS:** In late-stage prostate cancer, costs of care assume a U-shape, with the highest costs being incurred at diagnosis and at the end of life. Patterns and components of care differed somewhat between treated and untreated patients while hospital services consistently accounted for the most spending.

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THE ECONOMIC BURDEN OF METASTATIC BREAST CANCER

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OBJECTIVES: Metastatic breast cancer (MBC) is incurable, but survival and quality of life may be prolonged for years with available therapies; however, costs associated with MBC and its treatment are not fully defined. We conducted this research to compile and synthesize the published research concerning the health economics of MBC. **METHODS:** We systematically reviewed MEDLINE-indexed, English-language literature, using keyword searches to identify articles published in the 5 years before October 2008. We excluded articles related to supportive therapy, early dis ease, diagnosis, non-economic issues, regions outside North America, Europe or Australia, or economic methods. Additional articles were added from searches of non-MEDLINE-indexed sources such as organization and government websites. **RESULTS:** Of 43 articles identified from MEDLINE, 19 were included; an additional 13 articles and abstracts were added from non-MEDLINE-indexed sources, for a total of 32 articles and abstracts. No comprehensive study was found which included estimates of the total MBC economic burden across all treatment options. Most (7 of 10) analyses of the per-patient direct MBC costs originate from the US. The only published national MBC costs were derived from UK data. Thirteen economic models have been published showing that numerous treatments are cost-effective, yet generally provide only small improvements in survival. Nine published economic models evaluate hormonal therapies; 7 compare letrozole and tamoxifen and generally show letrozole to be cost-effective. In health technology assessments, trastuzumab, capecitabine, and gemcitabine have been judged cost-effective, with inconsistent results for vinorelbine. **CONCLUSIONS:** There is no known recent publication concerning the overall economic burden of MBC. However, many publications assess the costs and cost-effectiveness of available treatments. Models show that some of these treatments, most notably letrozole, are cost-effective. More MBC economic evaluations should be published to better inform the use of new treatment modalities in a variety of health care settings.

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FIRST YEAR COST EXPENDITURES ASSOCIATED WITH HEAD AND NECK CANCER DIAGNOSIS IN THE U.S. MANAGED CARE POPULATION

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OBJECTIVES: Head and neck cancer (HNC) is the sixth most common neoplasm in the U.S.; approximately $3.2 billion are spent annually for treatment. The projected